

band edges, and attenuated at least 60 dB at all other frequencies.

(3) Within unoccupied channels in the frequency range of 2.500–2.690 GHz, the maximum out-of-band power shall be attenuated at the upper and lower channel edges of an unoccupied channel by at least 25 dB relative to the licensed analog peak visual carrier power level or digital average power level of the occupied channels (or, when subchannels or 125 kHz channels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths), then linearly sloping from that level to at least 40 dB of attenuation at 0.25 MHz above and below the occupied channel edges, then linearly sloping from that level to at least 50 dB of attenuation at 3.0 MHz above and below the occupied channel edges, and attenuated at least 50 dB at all other unoccupied frequencies.

(e) Boosters operating with an EIRP less than –9 dBW per 6 MHz channel shall have no particular out-of-band power attenuation requirement, except that if they cause harmful interference, their operation shall be terminated within 2 hours of notification by the Commission until the interference can be cured.

(f) The maximum out-of-band power of an ITFS response station using all or part of a 6 MHz channel, employing digital modulation and transmitting with an EIRP greater than –6 dBW per 6 MHz channel shall be attenuated (as measured in accordance with §21.908(e)) at the 6 MHz channel edges at least 25 dB relative to the average 6 MHz channel power level, then attenuated along a linear slope to at least 40 dB at 250 kHz beyond the nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB at all other frequencies. The maximum out-of-band power of an ITFS response station using all or part of a 6 MHz channel, employing digital modulation and transmitting with an EIRP no greater than –6 dBW per 6 MHz channel shall be attenuated (as measured in accordance with §21.908(e)) at the channel edges at least 25 dB relative to the av-

erage 6 MHz channel transmitter output power level (P), then attenuated along a linear slope to at least 40 dB or $33+10\log(P)$ dB, whichever is the lesser attenuation, at 250 kHz beyond the nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB or $43+10\log(P)$ dB, whichever is the lesser attenuation, at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB or $43+10\log(P)$ dB, whichever is the lesser attenuation, at all other frequencies. Where ITFS response stations with digital modulation utilize all or part of more than one contiguous 6 MHz channel to form a larger channel (*e.g.*, a channel of width 12 MHz), the above-specified attenuations shall be applied only at the upper and lower edges of the overall combined channel. Notwithstanding these provisions, should harmful interference occur as a result of emissions outside the assigned channel(s), additional attenuation may be required by the Commission.

(g) The requirements of §73.687(c)(2) will be considered to be satisfied insofar as measurements of operating power are concerned if the transmitter is equipped with instruments for determining the combined visual and aural operating power. However, licensees are expected to maintain the operating powers within the limits specified in §74.935. Measurements of the separate visual and aural operating powers must be made at sufficiently frequent intervals to insure compliance with the rules, and in no event less than once a month. However, the provisions of §73.687(c)(2) and of this paragraph shall not be applicable to ITFS response stations or to low power ITFS booster stations authorized pursuant to §74.985(e).

(h) Compliance with the out-of-band emissions limitations shall be established in accordance with §21.908(e) of this chapter.

[63 FR 65117, Nov. 25, 1998, as amended at 64 FR 63740, Nov. 22, 1999; 65 FR 46622, July 31, 2000]

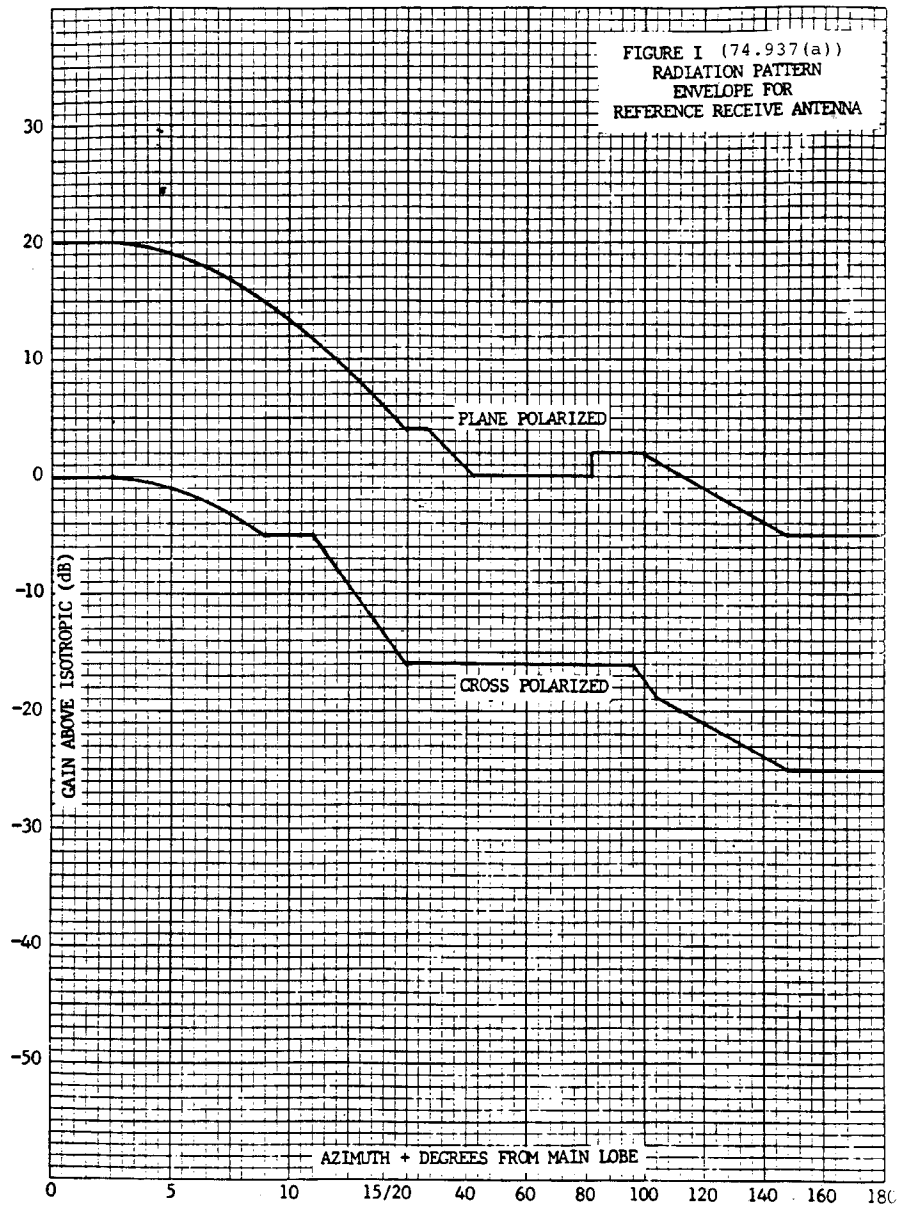
§ 74.937 Antennas.

(a) In order to minimize the hazard of harmful cochannel and adjacent channel interference from other stations, directive receiving antennas should be

Federal Communications Commission**§ 74.937**

used at all receiving locations other than response station hubs and response stations operating with an EIRP no greater than -6 dBW per 6 MHz channel. The choice of receiving antennas is left to the discretion of the licensee. However, for the purpose of interference calculations, except as set forth in § 74.939, the general characteristics of the reference receiving antenna shown in Figure 1 of this section (*i.e.*, a 0.6 meter (2 foot) parabolic reflector antenna, are assumed to be used in accordance with the provisions of § 74.903(a)(3) unless pertinent data is submitted of the actual antenna in use for reception. Licensees may install receiving antennas with general characteristics superior to those of the ref-

erence antenna. Should interference occur and it can be demonstrated that the existing receiving antenna is inadequate, a more suitable antenna should be installed. In such cases, installation of the new receiving antenna will be the responsibility of the system operator serving the receive site. A response station operating with an EIRP no greater than -6 dBW per 6 MHz channel may use an omnidirectional receiving antenna. However, for the purpose of interference protection, such response stations will be treated as if utilizing a receive antenna meeting the requirements of the reference receiving antenna shown in Figure 1 of this section.



(b) Except as set forth in § 74.931(c)(4) and (d)(3), directive transmitting antennas shall be used whenever feasible so as to minimize interference to other licensees. The radiation pattern shall

be designed to minimize radiation in directions where no reception is intended. When an ITFS station is used for point-to-point service, an appropriate directional antenna must be

used. Notwithstanding these provisions, response stations operating with an EIRP no greater than -6 dBW per 6 MHz channel may utilize omnidirectional transmitting antennas.

(c) The use of elevated receiving antennas is preferable to the use of elevated transmitting antennas or greater power to provide the desired service.

(d) The use of vertical or horizontal plane polarization or right-hand or left-hand rotating (circular) polarization may be used to minimize the hazard of harmful interference between systems. The Commission reserves the right to specify the polarization to be used.

(e) The power gain compared to an isotropic antenna and the directive properties of the transmitting and receiving antennas proposed to be employed, as well as the geometric distribution of the transmitting and receiving points, shall be supplied with each application for a new ITFS fixed station or for changes in the antenna facilities of an existing station.

[28 FR 13731, Dec. 14, 1963, as amended at 48 FR 9012, Mar. 3, 1983; 49 FR 32596, Aug. 15, 1984; 50 FR 26761, June 28, 1985; 52 FR 3806, Feb. 6, 1987; 58 FR 44951, Aug. 25, 1993; 63 FR 65118, Nov. 25, 1998; 65 FR 46622, July 31, 2000]

§ 74.938 Transmission standards.

The width of an ITFS channel is 6 MHz. However, the licensee may sub-channelize its authorized bandwidth, provided that digital modulation is employed and the aggregate power does not exceed the authorized power for the channel, and may utilize all or a portion of its authorized bandwidth for ITFS response stations authorized pursuant to § 74.939. The licensee may also, jointly with other licensees, transmit utilizing bandwidth in excess of its authorized bandwidth, provided that digital modulation is employed, all power spectral density requirements set forth in this part are met and the out-of-band emissions restrictions set forth in § 74.936 are met at the edges of the channels employed.

[63 FR 65119, Nov. 25, 1998]

§ 74.939 ITFS response stations.

(a) An ITFS response station is authorized to provide communication by

voice, video and/or data signals with its associated ITFS response station hub or associated ITFS station. An ITFS response station may be operated only by the licensee of the ITFS station, by any person or entity authorized by the ITFS licensee to receive point-to-multipoint transmissions over its channels, by any lessee of excess capacity, or by a subscriber of any lessee of excess capacity. The authorized channel may be divided to provide distinct subchannels for each of more than one response station, provided that digital modulation is employed and the aggregate power does not exceed the authorized power for the channel. An ITFS response station may also, jointly with other licensees, transmit utilizing bandwidth in excess of that authorized to the station, provided that digital modulation is employed, all power spectral density requirements set forth in this part are met, and the out-of-band emission restrictions set forth in § 74.936 or paragraph (k) of this section are complied with.

(b) ITFS response stations that utilize the 2150–2162 MHz band pursuant to § 74.902(f), the 2500–2686 MHz band, and/or the 125 kHz channels identified in paragraph (j) of this section may be installed and operated without an individual license, to communicate with a response station hub, provided that the conditions set forth in paragraph (g) of this section are met and that ITFS response stations' technical parameters are consistent with all applicable rules in this part and with the terms and conditions set out in the Commission's *Declaratory Ruling and Order*, 11 FCC Rcd 18839 (1996).

(c) An applicant for a response station hub license, or for modification thereto, shall:

(1) File FCC Form 331 with the Commission in Washington, DC, and certify on that form that it has complied with the requirements of paragraphs (c)(2) and (d) of this section and that the interference data submitted under paragraph (d) of this section is complete and accurate. Failure to certify compliance and to comply completely with the requirements of paragraphs (c)(2) and (d) of this section shall result in